

# SCIENTIFIC ZOROASTRIAN

## *Teachings from the Religion of Zarathushtra and Discoveries of Modern Science.*

### *The Ancients did know Much More!!*

**Note from the Science Editor :**

**“Ba Dini-Avanaasta Avizeh Mazdayasnan Paeda Aidun Ba Kardam ke Hich Chih Nista Ke Ba Avesta Ander Nista”.**

“I have created the indestructible Holy Mazdayasni Din in such a way that nothing exists which is not there in Avesta”.

Thus spoke Ahura Mazda : vide Pazand Setayash : “Ba Naam-i-Yazad”.

The primary aim of Modern Science is to understand Nature. There was a time at the end of the last century, when Science thought it had understood all Nature. But that false confidence was mercilessly shattered in our present century. To-day Science is a grand collection of mysteries. Nuclear physics has come across “immaterial particles” and “point entities”. The sky of astrophysics showers startling mysteries every day. The confident tone of biology to produce normal ‘life’ in the laboratory has become considerably hazy. And to add insult to injury, the Science of Extra Sensory Perception presents extra-ordinary and abnormal phenomena in the deep unknown ‘within’ of a human being.



Religion teaches the right way of life. Its lessons are based on ultimate truths of creation. It explains such truths to a certain extent, and is thus a Science.

But it is a Science beyond the normal senses and intelligence of ordinary man. It requires man to lead his life in the way ordained by God and promises that then and only then Nature shall reveal itself to him, by and by, and stage by stage (Gatha Ha 30-2).

The Religion of Zarathushtra prescribes several practices and canons for the persons born in it. They are intended as spiritual exercises for the evolution of their souls. Each prescription has behind it certain unrevealed Truths and Secrets of Nature. Each is based on some chapter of Mystic Science.

To-day, something startling is happening. Several branches of modern science have suddenly begun to indicate some pointers to the mystical Truths taught by our Religion. Facts after facts and observations after observations of modern science reveal that the explanations of Nature given by science are just surface explanations; there must be deeper and more mysterious forces and things behind, and Religion appears to know much about it. It seems that the quotation at the beginning of this article is not an expression of exaggeration or vainglory, but it speaks the truth. Avesta contains everything; it is the Science of all sciences!



In the new series of articles, we are initiating in this issue, we shall present before you such facts and observations from modern sciences which will indicate the profound "scientific" wisdom of our Religion.

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One of the spiritual prescriptions of Zoroastrianism is the Manthra-prayers. These are to be recited in a particular way and at prescribed times. Certain prayers are to be recited only at the specified time of the day. In particular, one day is divided into five parts-'Gaahs' and certain Rules are given for the division; It is now being revealed that **these Rules of Gaahs have in them some profound mystic**

**science, far advanced than the science of today's!**

✓The writer of the following Article is one of our team of science minded Ilm-e-Khshnoomists, whose hobby it is to collect facts observations and ideas of modern science and try to see whether there is any connection or relation or comparison between them and the teachings of our Religion. The result of this exercise is that we marvel and wonder, with great awe and devotion, at the Truths taught and the practices prescribed by the Religion of Zarathushtra, and particularly at the great maxim : **nothing exists which is not there in Avesta.**

- Science Editor,

## **"THE RIGHT MOMENT" IN NATURE!**

### ***Zoroastrian Rules of the Five 'Gaah's in a Day and Some Discoveries of Modern Science.***

#### ***The Forces Arising out of the Earth's Rotation.***

By *KHSHNOOMIST*

Is there such a thing as the "Right Moment" in Nature for any event or happening or phenomenon? According to Zoroastrianism, everything in the Universe is subject to and governed by Time. And to be cognisant of the exact time when certain natural phenomena occur, is considered to be of prime importance. A Zoroastrian is supposed to be always on the alert about such phenomena taking place round the

year. This exact time or moment is known as *Bar Vakt*. There are hundreds of such events and phenomena, ranging from the ordinary to the sublime.

To give a very simple example : If, owing to unavoidable circumstances, I am unable to meet the Editor's deadline for this article (and I very nearly did!), as a Zoroastrian, instead of wringing my hands and tearing my hair, I should content myself with the

thought that this article was not meant to see the light of day at the time I wanted to, despite best efforts, because of the inexorable working of the complex and intricate machinery of Nature. It would be published only when the moment is right and due in Nature.

Let's now enumerate some of the important events involved in *Bar Vakt*.

### THE GAAHS

In this article, however we shall confine ourselves to the significance of the *Gaahs*. For the Zoroastrian masses to which most of us belong, the 24-hour cycle (the solar day) is divided into 5 periods: *Haavan*, *Rapithwan*, *Ujiren*, *Aiwisruthrem* and *Ushahin*. These divisions are made because of two fundamental scientific facts:

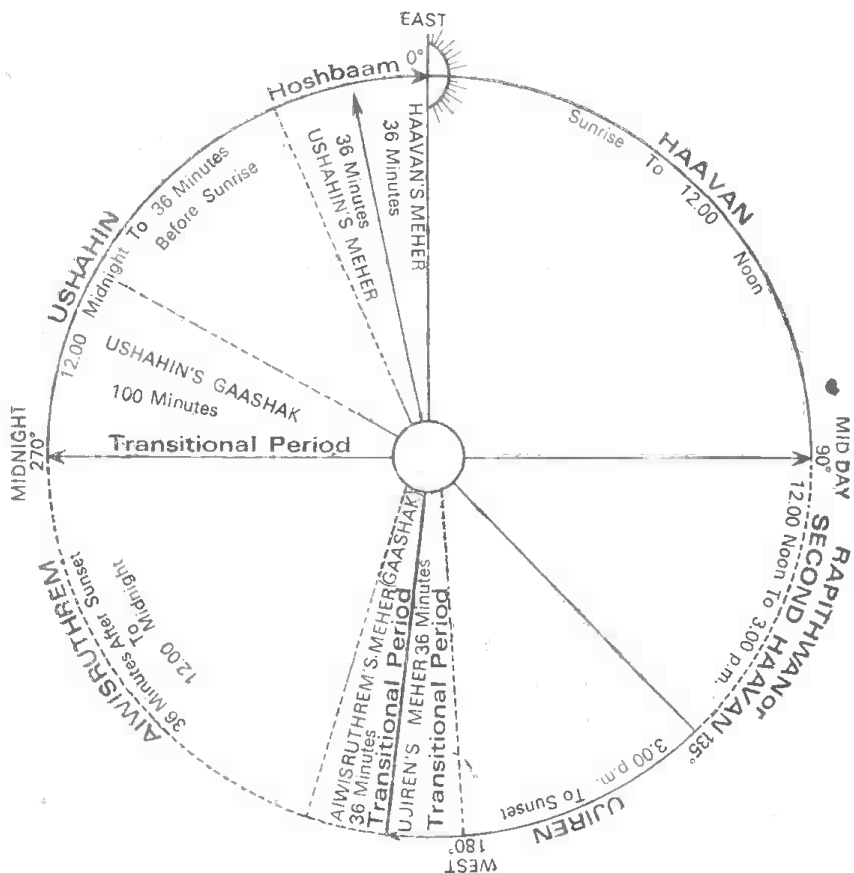


Diagram Showing The Five Main Gaahs: Note the transitional periods between the Ujiren and the Aiwisruthrem Gaahs of 72 minutes and between the Aiwisruthrem and Ushahin Gaahs of 100 Minutes. The short transitional period of 10 minutes between the Haavan and Rapithwan and Rapithwan and Ujiren Gaahs are not shown in the Diagram.

Besides the day-to-day normal events, Zoroastrianism teaches that every occasion or festival must be celebrated on its due date in Nature. The performance of a host of ceremonies and rituals, the celebration of the Gahambar festivals and Fravardegan days, the New Year festival, the division of the day into five *Gaahs* etc. etc.—all have their *Bar Vakt* in Nature.

(a) all life on earth is ultimately dependent on the Sun and the presence or absence of sunlight; (b) all life is constantly subject to the changes produced by the rotation of our Earth about its axis.

A Zoroastrian is enjoined to perform the *Kushti* prayer at the change of every *Gaah*, because the *Kushti* is a very powerful weapon and apparatus, which attracts

and imbibes the Avestic *Staota* (vibratory colours caused by the recitation of Avestic *Manthra*). It has the capacity to preserve these *Staota* for a specific period, on account of its being made of wool and because of the efficacy of the *Manthravani* recited while performing the *Kushti* ceremony. This assimilation of the *Staota* by the *Kushti* keeps a Zoroastrian's personal magnetism pure and provides continuous spiritual nourishment to the soul.

Now the creation of the *Staota*, in the first place, depends mainly on the radiation, light and rays (both visible and invisible) emanating from the Sun. These are not constant but undergo ceaseless fluctuations and permutations round the day. These fluctuations, in turn, are mirrored in the five *Gaahs* of the Zoroastrians. Thus, one has to refurbish and replenish the *Staota* in the *Kushti*, which also undergo changes with the fluctuations in the degree and intensity of the Sun's rays, by reciting the *Kushti* prayer after the switch-over from one *Gaah* to another.

### HAAVAN AND RAPITHWAN GAAHS

The *Haavan Gaah* begins 36 minutes before sunrise and lasts till noon (local time)\*. The next *Gaah*, *Rapithwan* (which is the prevalent *Gaah* for the first seven months of the Zoroastrian New Year) or the Second *Haavan* (applicable for the remaining five months) starts not exactly at 12.00 noon but 10 minutes later, i. e. 10 minutes after the conclusion of the *Haavan Gaah*. This requires some explanation.

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\* All timings hereafter are in local time.

36 minutes, which period is called "*Ujiren's Meher*". This is only a grace period and no one should **begin** any prayers in this period.

### ✓ TRANSITIONAL PERIOD

This transitional period of 10 minutes, between the *Gaahs*, *Haavan* and *Rapithwan*, and the *Gaahs*, *Rapithwan* and *Ujiren* (which is the 3rd *Gaah*) also has another 'ilmiyati' explanation. It is common knowledge that at the time of sunrise, it takes the Sun's rays about 9 minutes to reach the Earth, because of the vast distance (93 million miles) separating our planet from the Sun. Now, after 12.00 noon, the visible rays, which so far belonged to the *Haavan Gaah*, get weak and stale, and therefore, the Sun has to shed them and convert them into those of the *Rapithwan Gaah*, thanks to the jolting of the Earth. This change-over process takes 9-10 minutes.

But even thereafter, the *Staota* of the *Haavan Gaah* or the *Rapithwan Gaah* are not transmitted to those of *Rapithwan* and *Ujiren Gaahs* respectively. In other words, while the take-off stage for the new *Gaah* during day-time is reached in 10 minutes, it takes at least 33 minutes for the *Staota* of the new *Gaah* to be completely restored. A Zoroastrian should, therefore, refrain from praying during those 33 minutes of the *Gaah-cum-Staota* changeover and only thereafter, perform the whole *Kushti* for the new *Gaah*.

### UJIREN. GAAH

The *Ujiren Gaah* is likewise established not at 3.00 p. m. when it is just born, but at 3.33 p. m. It lasts till sunset and a Zoroastrian, who is unable to finish his prayers at sunset can continue for another

### ✓ AIWISRUTHREM GAAH

And hereafter comes one of the most crucial and delicate periods of yet another 36 minutes, called *Aiwisruthrem's Meher*. Now that the Sun no more shines on our part of the globe and because of the onset of darkness, the magnetic fields and currents operating on Earth, undergo a metamorphosis. The diurnal rhythm of light and dark alternating in a regular pattern brings about this upset. While dealing with the first three *Gaahs* during daytime, we saw that the Earth undergoes a minor jolt at the time of the change-over from one *Gaah* to another. But now that the Sun itself is not shining, the intensity of this jolt is sharper and its effect lasts for 36 minutes. This short, murky period beginning from the 37th minute after sunset and lasting till the 72nd minute (both inclusive) is technically called, *Gaashak*. During this time, a Zoroastrian is enjoined **not** to recite the holy *Manthravani*, as the forces of darkness, *Asare - Tariki*, which pervade the atmosphere, try to hold sway over living beings and the Avestic *Staota* can be rendered impotent. The *Gaashak* period cuts the *Staota* virtually to nil. It is only after the 72nd minute after sunset that a lay-devout can begin his prayers in the *Aiwisruthrem Gaah*. ✓

### USHAHIN GAAH

A similar, but a longer *Gaashak* period lasting 100 minutes, starts as soon as the *Aiwisruthrem Gaah* is concluded at 12.00 midnight, and the final, *Ushahin Gaah*, begins. Thus, the *Gaashak* period is from

12.00 midnight to 1.40 a. m., when a Zoroastrian should avoid praying.

You will have seen from the above that the transitional periods between two *Gaahs*, when *Manthravani* need not be recited, varies from *Gaah* to *Gaah*.

### • TAIGI •

We have still to examine one of the most important part of the diurnal divisions or the *Gaahs*, viz., the period from the latter part of *Ushahin* to the *Haavan Gaah*. This is a unique period which lasts from about 3.00 a. m. to very nearly sunrise and includes the *Hoshbaam*.

This period has no parallel and is the exact opposite of the *Gaashak* period. Called "*Taigi*", it is considered an ideal one not only for reciting prayers but also for performing weddings and Navjotes and for the *Paad-Ruz* (Uthamna) ceremony for the soul of the departed on the dawn of the 4th day after death.

During this pre-dawn period, explains Ilm-e-Khshnoom, not only the magnetism prevailing in the Earth's atmosphere is more refined and purer than at any other time, but also the vibrations in the environment are least disturbed or agitated. It is the time, above all, when the first reverberative currents and rays of *Sarosh* are brought down on Earth and when the free flow of *Yazatic* forces around our planet is more dominant.

This, briefly, is what Zoroastrianism, as seen through the Khshnoomic microscope, has to say about a segment of the vast and difficult concept of Time and its daily divisions and measurement.

That all this cannot be arbitrary or capricious, nor according to the whims of some of the Zoroastrian priests of yore who might have concocted the bogey of the

*Gaahs* to frighten an errant laity to recite its prayers five times a day, will be presently borne out by the startling observations of modern science.

### ✓ MODERN SCIENCE

Let's take some of the contemporary scientific beliefs and theories pertaining to our subject. Readers can draw their own conclusions about the distance that orthodox science has still to traverse to come near the idea of *Bar Vakt*, as it works in the daily life of a human.

Time, admit scientists, is the most elusive and frustrating principle in physics. As prof. A. N. Whitehead writes in his "Concept of Nature", "It is impossible to meditate on time and the mystery of the creative passage of nature without an overwhelming emotion at the limitations of the human intelligence".

But here, we shall not go into the detailed exposition of Time as a separate dimension or the problems of Time, Space and Motion (as worked out by Einstein, one of the most eminent scientists of the century) or Time as a form of Energy, (as postulated by the great Russian astrophysicist, Dr. Nikolai Kozyrev) but restrict ourselves to the notion of Time as we earthlings confront it in our day-to-day lives, and what science has to say about the interaction of the Sun and the Earth and their joint influence on living things, who have to live well 24 hours of the day.

### ✓ SOLAR ACTIVITY

Scientists are now convinced that the Sun is the only heavenly body that dominates and controls the destiny of our solar system. And in the solar system, the bonds linking our Earth to 'solar activity'

are unbreakable. It is called "solar activity", because the Sun is not an immutable golden sphere which shines with uniform brightness. Scientists are also convinced that the Sun is the locale of intense constant physical and chemical activity, which cause sunspots and solar flares.

But besides these surface and coronal radiation, also known as electromagnetic radiation, every moment the turbulent solar atmosphere throws up matter, small quantities of which manage to escape even the Sun's tremendous gravity. It is estimated that these "small quantities" of particles amount to a million tons per second. These particles spread outward from the Sun in all directions and are called the 'solar wind'. What is pertinent and interesting is that every second, nearly a hundred trillion solar particles reach the vicinity of the Earth. Thanks to the Earth's magnetic field, the electrically charged particles of the solar wind are deflected along the magnetic lines of force. That is, they move in a tight spiral from one magnetic pole to the other, "back and forth over and over". These moving particles, held in place by the magnetic lines of force, constitute the magnetosphere.

Since the magnetosphere dips closest towards the Earth's surface at the magnetic poles, it is here that the charged particles easily leak out of the magnetosphere and into the Earth's upper atmosphere. This flood of charged particles radically upsets the situation in the upper atmosphere, produces wild static and even wipes out for some time, some of the charged layers in the upper atmosphere! At such times, a needle of the magnetic compass will go haywire, **"in response to all the jolts being undergone in the region of the magnetic poles"**.

Here, we may pause to remind the reader that what he has just read has been expounded by physicists and not by ivorytower obscurantist Zoroastrians!! Traditional science, however, has yet to find out that the "jolts" undergone by the Earth are not spasmodic, but occur at fixed, regular intervals every day, as taught in the concept of the five *Gaahs* of Zoroastrians. Science will have to expand its present orthodox frontiers considerably, before it is able to digest the baffling phenomena thrown up by that Science of Sciences, Zoroastrianism.

### ✓ TERRESTRIAL MAGNETISM

All the aspects of the 'solar activity' considered above, influence the Earth's magnetic field, which is not constant but in a permanent state of flux. These variations in terrestrial magnetism do affect living creatures. Although these variations are weak, living organisms are extremely sensitive to the changes in the magnetic forces in the environment. In man, the effects of terrestrial magnetic disturbance have been amply demonstrated by H. Friedman, R. O. Becker and G. Bachman on mental patients and by W. Cyran on the onset of labour. Prof. F. A. Brown has even gone to the extent of saying that living creatures have, in addition to the "biological clock" which regulates their activity in relation to time, a "biological compass" which serves to orient them in space! "Thus man, without being aware of it, can be affected by slight variations in terrestrial magnetism", caused by the continuous activity of the Sun.

It was left to Georges Lakhovsky to regard the 200 quintillion living cells in our body as tiny batteries with the nucleus

acting as an oscillating circuit and giving off radiations. Just as an aerial of a radio set is placed in a variable electro-magnetic field, created by the waves radiated by the broadcasting station, **so also our cells move rapidly with the Earth's rotation and revolution through a variable electro-magnetic field generated by radiations from the Sun and the Milky Way, not to mention the distant galaxies. Like all living matter, these cells are balanced on a razor's edge, for they are constantly under the influence of radiations of higher and lower frequency, which compel them to alter their vibrational rate and so cause baffling diseases.** Lakhovsky showed that every living organism is a complete and delicate radiative apparatus depending upon chains of interlocking processes within and supported by an ocean of vibrations without. The whole Universe is knit together by a "universal plexus of cosmic rays".

Any wonder then, that the wise and far sighted Zoroastrian scientists of hoary antiquity have left us a priceless legacy whereby we *Baste-Kustians* could constantly transmute these maleficent forces of *Asare-Tariki* into *Asare-Roshni* by performing the *Kushti* ceremony every time a *Gaah* changes, according to its *Bar Vakt* in Nature? ✓

### PRE - DAWN PERIOD

So far, we have tried to examine briefly what modern science has to say about the incontrovertible effects of 'solar activity' on all living organisms on earth. Now let's turn to the other aspect viz., the special importance of the pre-dawn period for humans and why it is perhaps the best and more significant than any of the

other diurnal periods, for performing certain activities.

Besides the effect of terrestrial magnetism on all living things, there is yet one more influence caused, this time, by the natural cycles produced by the Earth's rotation. For example, our body temperature is rarely exactly 37° centigrade. It follows a regular circadian or biorhythmic pattern of change. This temperature rises with the Sun and goes on rising, along with the rate of heart beat and urine production, until all three reach a peak of activity just after noon. The metabolism then begins to slow down until it falls to its lowest level of activity at about four in the morning. "Life is at its lowest ebb during the dog-watch just before dawn". The body, mind and heart are the most relaxed and at ease during that period.

According to Prop. G. Piccardi, Director of the Institute of Physical Chemistry in Florence, Italy, there are very long electro-magnetic waves extending several thousand kilometers. These are "extremely low frequency" waves with a weak energy level and neither the walls of houses or laboratories, nor the barrier of the human body can stop their path. In 1970, Dr. H. L. Koenig of Munich observed that these very low frequency waves are more abundant at sunrise. They act on the germination of corn, the hatching of insects and, above all, on man, by slowing the speed of his reflexes.

Physiologists have been amazed to find that labour pains begin twice as often after midnight as at noon (unless parturition is induced in one way or another), and the peak in birth occurs at about four o'clock in the morning, just when the metabolic cycle hits its lowest point and the expectant mother is most relaxed.

And the Zoroastrians, millenia ago, considered this period of *Taigi* as the *Bar Vakt*, the right, perfect time for carrying on a host of beneficent activities!

So, dear reader, next time you think of tossing over your shoulder a religious practice as superstitious nonsense, because some half-baked, self-styled 'reformist' says so, think twice before you act. Otherwise, you may jettison the baby with the bath water!



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